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| 09/940,788      | 08/29/2001  | Yuji Ono             | 011075              | 4613             |

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EXAMINER

PERRIN, JOSEPH L

|          |              |
|----------|--------------|
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1746

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Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 13

Application Number: 09/940,788  
Filing Date: August 29, 2001  
Appellant(s): ONO ET AL.

\_\_\_\_\_  
Daniel A. Geselowitz, Ph.D.  
For Appellant

**MAILED**

DEC 02 2003

**EXAMINER'S ANSWER**

**GROUP 1700**

This is in response to the appeal brief filed 07 October 2003.

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**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The Appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The Appellant's statement of the issues in the brief is substantially correct. The changes are as follows: The rejection of claims 1-3 as being anticipated under 35 U.S.C. §102(b) to Bergman *et al.* (US Pat. No. 5,377,708) is withdrawn. While the Examiner believes the apparatus of Berman *et al.* anticipates

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Appellant's broadly claimed method, the rejection over Bergman *et al.* has been withdrawn to simplify issues for appeal.

**(7) Grouping of Claims**

The rejection of claims 1-3 stand or fall together because Appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

4,544,445

Cady

10-1985

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3 are rejected under 35 U.S.C. §102(b) as being anticipated by US 4,544,446 to Cady. This rejection is set forth in prior Office Action, Paper No. 6, paragraphs 4 & 8-9.

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**(11) Response to Argument**

Appellant's arguments filed 07 October 2003 have been fully considered but they are not persuasive.

Appellant argues that there is "no teaching in Cady that Cady's apparatus can achieve the limitation of claim 1 of the amount of inert gas being supplied at the outer portion being larger than that at the center." Appellant further relies on specific shapes of supply ports 32a and Figures 4(A) to 4(C), further stating such structure is not claimed in the claim 1.

The Examiner agrees that the argued structure is not claimed in the method of claim 1, and since limitations from the specification are not read into the claims Appellant's arguments relying on subject matter not claimed is not persuasive.

Furthermore, the Figures of Cady relied on by the Examiner, specifically, Figures 8A & 8B, are very similar in structure to those of Appellant. Each provides gas supply ports such that the surface area of the supply ports cumulatively is greater at the outer periphery of the showerhead than at the center thereof. This can be explained as follows: As shown in Figure 8B of Cady, there are three ports (64', 64'', 64''') at the outer periphery and one port (64''''') at the center. Therefore, the operation of the Cady apparatus inherently discloses a 3:1 ratio of gas volume, which reads on Appellant's claimed limitation of "the amount of inert gas being supplied at the outer portion being larger than that at the center." It is further noted that since the gas flow has to pass from the center to the outer periphery of the wafer given the absence of exhaust at the

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center, the gas from the center port distributes across the wafer and radially across the outer periphery of the wafer. Therefore, this would result in slightly more than a 3:1 ratio.

Appellant further argues that Figures 3-10 in column 9, lines 15-24 are directed to "fluid flow" and that the reference to centrifugal force along with the fluid surface tension (column 9, lines 15-17) suggests that the delivery of washing liquid is the main consideration. However, Appellant also states that "this can refer either to the washing liquid or drying gas". The Examiner agrees. Furthermore, in column 3, lines 38-49, Cady states "[a] common method utilized for drying is spin drying" and that "a flow of nitrogen directed at the center of the wafer is needed to move the droplets." Thus, the operation of the showerhead in Figures 8A-8B of Cady, clearly show fluid flow guides such that the flow of fluids, such as nitrogen drying gas, direct the gas supply more towards the outer periphery than to the center (at least at a 3:1 ratio).

Appellant further argues that "none of Cady's Figures 6-8(B) appears to resemble Figures 4(A) to 4(C) in the present application". This is not persuasive for at least two reasons.

Firstly, as noted above, no structure in Appellant's Figures 4(A) to 4(C) are claimed, as readily admitted by Appellant. The operation of Cady performs the claimed method steps of Appellant's claimed method and, therefore, reads on Appellants claimed method.

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Secondly, also as noted above, the structural showerheads of Cady and Appellant each provides gas supply ports such that the surface area of the supply ports cumulatively is greater at the outer periphery of the showerhead than at the center thereof. The slight structural variants associated with the showerhead of Cady and Appellant's showerhead are not claimed. The operation of Cady's showerhead reads on Appellant's broadly claimed method, that is, the amount of drying gas applied to the outer periphery of the wafer is greater (at least three times more) than that of the center. Recitation of Cady reads on Appellant's claimed method.

Regarding Appellant's untimely Declaration under 37 CFR 1.132, it is noted that MPEP §1208 states that:

The examiner should treat affidavits, declarations, or exhibits filed with or after the notice of appeal in accordance with 37 CFR 1.195.

However, in the interest of compact prosecution, the Declaration has been considered and is deemed not persuasive.

Appellant relies on hearsay without experimental evidence in arguing how the gas may flow solely at the edge of the wafer. Firstly, Appellant's opinion is not sufficient to overcome the anticipatory Cady rejection under 35 USC §102(b).

Secondly, Appellant is silent with respect the claimed subject matter, namely, the inert gas supplied to the center of the wafer, much less whether or not Cady anticipates the amount of inert gas supplied at the outer peripheral portion as being larger than the amount of gas supplied at the center thereof.

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Appellant further argues that "Cady does not disclose a sealed drying space at the outer peripheral portion of the face of the wafer", relying on the comparison of Cady with Figure 3 of Appellant. Appellant subsequently argues that "[t]he Examiner has cited Cady's arrows 40 as illustrating the sealed drying space. However, arrows 40 illustrate the **fluid flow** (see column 7, line 46), not a sealed space." This is not persuasive because the Examiner cited column 7, lines 44-58, which taken in its entirety includes the gas flow 40, stated in column 7, lines 44-47, as the space which includes the sealed system, stated in column 7, line 54. The gas flow space which flows at the outer peripheral portion of the face of the wafer is in a sealed system, as claimed by applicant.

For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

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Examiner  
Art Unit 1746

jlj  
November 26, 2003

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